IN THE CLAIMS

1. (Currently Amended) A method for designing a system on a target device utilizing programmable logic devices (PLDs), comprising:

generating options for utilizing resources on the PLDs in response to user specified constraints; and

refining the options for utilizing the resources on the PLDs where the options are independent of the user specified constraints.

2. (Original) The method of Claim 1, wherein refining the options for utilizing the resources is performed in response to the options not satisfying design parameters.

3. (Original) The method of Claim 1, wherein refining the options for utilizing the resources is performed in response to the options not satisfying the user specified constraints.

4. (Original) The method of Claim 1, wherein refining the options for utilizing the resources is performed in response to having a threshold number of options generated.

5. (Original) The method of Claim 1, wherein refining the options for utilizing the resources is performed in response to a triggering event.

6. (Original) The method of Claim 1, wherein generating options for utilizing the resources on the target device comprises determining locations to place components within user-defined logic regions on the target device.

7. (Original) The method of Claim 6, wherein determining positions to place the components is an iterative procedure that includes:

selecting locations;

evaluating the locations with a cost function; and

accepting the locations if the cost function yields a desired value.

8. (Original) The method of Claim 6, wherein refining the options for utilizing the resources on the target device independent of the user specified constraints comprises determining locations to place the components on the target device by removing constraints associated with the user-defined logic regions.

9. (Original) The method of Claim 1, wherein generating options for utilizing the resources on the target device comprises determining routing resources to allocate to user specified signals on the target device in response to user specified routing constraints.

10. (Original) The method of Claim 9, wherein determining routing resources is an iterative procedure that includes:

selecting routing resources;

determining whether routing resource selections satisfy the user specified routing constraints; and

re-selecting routing resources if the routing resource selections do not satisfy the user specified routing constraints.

11. (Original) The method of Claim 9, wherein refining the options for utilizing the resources on the PLD independent of the user specified constraints comprises determining routing resources to allocate to the user specified signals on the PLD by removing the user specified routing constraints.

12. (Currently Amended) A method for positioning components of a system onto a target device utilizing programmable logic devices (PLDs), comprising:

determining possible locations to place a user defined logic region on a target device;

determining possible locations to place a component in response to constraints associated with the user defined logic region; and

determining possible locations to move the component from the possible locations to place the component where the possible locations to move the component are independent of the constraints associated with the user defined logic region.

13. (Original) The method of Claim 12, wherein determining the possible locations to place the user defined logic region comprises:

assigning an initial location for the user defined logic region;

moving the user defined logic region to a new location; and

evaluating a cost function associated with the user defined logic region in the new location.

14. (Original) The method of Claim 13, wherein evaluating the cost function comprises:

determining a timing of the system associated with the user defined logic region in the new location; and

determining routing resources requirements associated with the user defined logic region in the new location.

15. (Original) The method of Claim 12, wherein determining possible locations to place the component comprises:

assigning an initial location for the component in the user defined logic region; and

evaluating a cost function as the user defined logic region and the component are moved.

16. (Original) The method of Claim 12, wherein determining possible locations to move the component from the possible locations to place the component independent of the constraints associated with the user defined logic region is performed in response to the possible locations to place the user defined logic region and the component not satisfying design parameters.

17. (Original) The method of Claim 12, wherein determining possible locations to move the component from the possible locations to place the component independent of the constraints associated with the user defined logic region is performed in response to the possible locations to place the user defined logic region and the component not satisfying user specified constraints.

18. (Original) The method of Claim 12, wherein determining possible locations to move the component from the possible locations to place the component independent of the constraints associated with the user defined logic region is performed in response to having a threshold number of possible locations determined.

19. (Currently Amended) A method for designing a system on programmable logic devices (PLDs), comprising:

determining routing strategies for routing signals on the PLDs in response to user specified routing constraints; and

determining additional routing strategies for routing the signals on the PLDs where the additional routing strategies are independent of the user specified routing constraints.

20. (Original) The method of Claim 19, wherein determining routing strategies for routing the signals on the PLDs in response to user specified routing constraints comprises:

selecting routing resources for a user specified signal on the PLDs in response to the user specified routing constraints; and

selecting routing resources for a non-user specified signal on the PLDs without utilizing the user specified routing constraints.

21. (Original) The method of Claim 19, wherein determining additional routing strategies for routing the signals comprises selecting routing resources for the user specified signal on the PLDs independent of the user specified routing constraints.

22. (Original) The method of Claim 19, wherein determining additional routing strategies for routing the signals is performed in response to the routing strategies not satisfying user specified routing constraints.

23. (Original) The method of Claim 19, wherein determining additional routing strategies for routing the signals is performed in response to the routing strategies not satisfying design parameters.

24. (Original) The method of Claim 19, wherein determining additional routing strategies for routing the signals is performed in response to a threshold number of routing strategies being determined.

25. (Currently Amended) A machine-readable medium having stored thereon sequences of instructions, the sequences of instructions including instructions which, when executed by a processor, causes the processor to perform:

generating options for utilizing resources on programmable logic devices (PLDs) in response to user specified constraints; and

refining the options for utilizing the resources on the PLD where the options are independent of the user specified constraints.

26. (Original) The machine-readable medium of Claim 25, wherein refining the options for utilizing the resources is performed in response to the options not satisfying design parameters.

27. (Original) The machine-readable medium of Claim 25, wherein refining the options for utilizing the resources is performed in response to the options not satisfying the user specified constraints.

28. (Original) The machine-readable medium of Claim 25, wherein refining the options for utilizing the resources is performed in response to having a threshold number of options generated.

29. (Original) The machine-readable medium of Claim 25, wherein refining the options for utilizing the resources is performed in response to a triggering event.

30. (Original) The machine-readable medium of Claim 25, wherein generating options for utilizing the resources on the target device comprises determining locations to place components within user-defined logic regions on the target device.

31. (Original) The machine-readable medium of Claim 30, wherein refining the options for utilizing the resources on the target device by ignoring the user specified constraints comprises determining locations to place the components on the target device by removing constraints associated with the user-defined logic regions.

32. (Original) The machine-readable medium of Claim 25, wherein generating options for utilizing the resources on the target device comprises determining routing resources to allocate to user specified signals on the target device in response to user specified routing constraints.

33. (Original) The machine-readable medium of Claim 32, wherein refining the options for utilizing the resources on the PLD by ignoring the user specified constraints comprises determining routing resources to allocate to the user specified signals on the PLD by removing the user specified routing constraints.